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ABSTRACT

As part of a larger study of 28 fourth-grade classroom teachers noted for their effectiveness in developing students' literacy skills, this paper studies relationships between teacher epistemology, classroom interactions, and related student epistemologies and identities. It details the links between four teachers' epistemological stances and those of their fourth-grade students via interview data and classroom discourse analysis. Classroom discourse, orchestrated by the teacher, likely mediates many of the associations between teacher and student epistemologies documented here. (Contains 35 references and a table identifying features of epistemological stances.) (RS)

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CELA RESEARCH REPORT

TEACHING AND LEARNING LITERATE EPISTEMOLOGIES

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CELA RESEARCH REPORT NUMBER 13009

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TEACHING AND LEARNING LITERATE EPISTEMOLOGIES

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Abstract

Relationships between teacher epistemology, classroom interactions, and related student epistemologies and identities were studied in four cases, detailing the links between teachers' epistemological stances and those of their students via interview data and classroom discourse analysis. Classroom discourse, orchestrated by the teacher, likely mediates many of the associations between teacher and student epistemologies documented here.

Vygotsky (1978) drew attention to the significance of language environments in learning, arguing that children "grow into the intellectual environment around them." In becoming literate we acquire a set of cultural practices, values and beliefs, within which we construct an identity (Collins, 1995; Egan-Robertson, 1998; Ferdman, 1990; Gee, 1996; Mahiri & Godley, 1998). This conclusion has been arrived at by socio-cognitive theorists (Langer, 1992), critical linguists (Fairclough, 1992; Gee, 1996), anthropologists (Collins, 1995; Heath, 1990), psychoanalytic theorists (Litowitz, 1993), discursive psychologists (Harre & Gillet, 1994), and workers in a range of other disciplines. The significance of this view is summed up by Gee (1996), who observes that "what is at issue in the use of language is different ways of knowing, different ways of making sense of the world of human experience, that is, different social epistemologies" (p. 59).

That is, in the process of becoming literate in school, children seem to be acquiring a great deal more than simply learning how to read and write words. They are acquiring *literate epistemologies*, with literacy and epistemology inseparable. Students don't just *do* literate activities, they are in the process of *becoming* literate as well (Fairclough, 1992). From this

perspective the significance of different classroom interaction patterns is not simply that some students will score less well on tests of literacy, but rather that what they learn about language, knowledge, and themselves as literate individuals will be very different, and at least as consequential as differences in test scores. These differences would need to be examined in the context of the values and purposes we hold for teaching children to become literate (Kelly, 1995).

Epistemologies and Discourses

Gee (1996) points out that, in literacy, "what is important is not [merely] language, and surely not grammar, but *saying(writing)-doing-being-valuing-believing combinations,*" which he calls *Discourses*. Discourses, he argues, come from, reveal, and produce social epistemologies. The view of epistemology Gee invokes here is consistent with Popkewitz (1998), who uses epistemology "to focus on the rules and standards of reason that organize perceptions, ways of responding to the world, and the conceptions of 'self'" (p. x). These are clusters of beliefs about knowledge and knowing, but also about authority and language. In theory, there should be some systematic connection among the epistemologies of teachers and their students and the discourse in which they are engaged. Since literacy is acquired within these discourses, the literate identities children develop are presumed to be influenced by the epistemological frame of the discourse.

Epistemology, however, is not something normally studied among young children (but see Matthews, 1984). It has commonly been viewed as a dimension of adolescent and young adult development. For nearly thirty years, questions regarding epistemological issues have been extended to young adults and adults at the high school and college levels in an attempt to understand stages of intellectual development (Belenky, Clinchy, Goldberger, & Tarule, 1986; Perry, 1970). More recently, however, epistemology has become viewed less as a matter of stage-wise cognitive development than of complex sociocognitive learning, thus implicating classroom instructional practices (Carlsen, 1997; Gee, 1996; Hoffer & Pintrich, 1997; Kardash & Scholes, 1996; Lyons, 1990; Nystrand, Gamoran, Kachur & Prendergast, 1997). Included in the implications are suggestions that teachers with different epistemologies will respond differently

to children, organize instruction differently, and represent children's development differently. Although there has been much recent research into teachers' epistemological stances (Carlsen, 1997; Hoffer & Pintrich, 1997; Kardash & Scholes, 1996; Lyons, 1990; Nystrand et al., 1997), the linkages among classroom discourse and teachers' and students' epistemologies have a limited empirical base. Nystrand and his colleagues (1997) offer examples of epistemologically different discourses in high school English classrooms and hypothesize connections with teachers' epistemologies and students' literate development. However, data that elaborate the connections between teachers' and students' literate epistemologies remain thin, particularly in the elementary classroom. Indeed, epistemologies have been studied as if they only begin in late high school.

The present study is a beginning attempt to examine the development of children's literate epistemologies and identities, and the discursive circumstances of that development. We attempt to connect children's epistemological thinking through the discourse of the classroom to their teacher's epistemological stance. We should make clear at the outset that the situated study of epistemology and its consequences is complicated by numerous factors, including the fact that different discourses can be evoked in different circumstances (Hoffer & Pintrich, 1997). Although it is possible to identify discourse practices with their associated values/beliefs, we all live within multiple discursive environments. Individuals work to maintain personal integrity, but the frequent tensions and disjunctures often lead us to talk out of both sides of our epistemological mouths. This *heteroglossia* (Bakhtin, 1981) complicates the study of the linkages among teachers' and students' epistemologies through discourse. Nonetheless, as Nystrand and his colleagues (1997) found, there are teachers whose classroom discourse reveals considerable homogeneity. Consequently, while recognizing the limitations, we set out to study classrooms that exhibited clear and contrasting epistemologies as a manageable first step in tracing the discursive links between teacher and student epistemologies.

METHODOLOGY

Data

This study draws on a larger study of fourth-grade teachers in five different states who are considered by administrators, colleagues and observers to be very capable and who teach with some degree of curricular integration. Test scores from these teachers' classrooms supported their designation as very capable (Allington & Johnston, in prep.), though the range of curricular integration was considerable. We spent ten full days in each teacher's classroom over the course of the school year, taking field notes, audio- and videotaping class and group interactions around books and content area material, and interviewing teachers and their students. Observations were distributed with five days in late fall to early winter and five days in mid- to late-spring, with at least two days in each case being consecutive. Initial observation in each classroom was done by two observers for reliability purposes. Daily field note summaries were also completed.

We interviewed the teachers early in the year and again later, using semistructured frameworks. The second interview was based in part on the teacher's viewing of a videotaped segment of the day's instruction. We raised issues of epistemology directly or indirectly through questions such as:

- When your students finish the fourth grade, what do you most hope to have accomplished?
- What are the most important things you do in language arts instruction to accomplish these?
- How can you tell when you have achieved them?
- One of the teachers in another project commented that she likes her students to talk a lot during the school day. How do you feel about that?
- When talking about a book in class, do you ever find that some students' have a very different understanding of the book than you do? What do you do about that?
- What do you do in social studies or science when the students bring up controversial issues, or where there is ambiguity about the correct answer?
- Some people think that if we just had enough money and scientists working on the problem we could figure out the best way to teach fourth grade? What do you think about that?

Aside from these formal, semi-structured interviews, we also interviewed informally over the course of the observation days. In addition, we interviewed students informally, and formally interviewed six students in each classroom, one male and one female at each of three levels of achievement (teacher designated as high, middle, and low in literacy based on formal and informal assessments). These interviews took place in mid- to late-spring.

In our interview with the students we raised the issue of epistemology directly or indirectly through such questions as:

- Do you ever do research in your class? How do you do that?
- Do you ever find sources of information that disagree? What do you do about that?
- When you are discussing books in class, do you like to add to the discussion?
- Do you find other kids' comments interesting?
- Have you ever disagreed with other people in the class in a book discussion?
- Have you ever disagreed with your teacher?

We probed to learn about the literate relationships among students – what they knew about each other as readers and writers, and whether they saw each other's experiences as significant. We also asked about how they knew whether someone was a good writer or reader.

These interviews were also semi-structured, and we encouraged children to say more about their responses. Consequently, matters of epistemology turned up in different parts of the interview for different children, as did indicators of their literate identities. Also, some students were more voluble than others. In their responses we were interested in the centrality of meaning making and in issues of authority – what counted as a valuable source of knowledge – and how students understood the significance of their own and others' competence and experience.

Constructs

In our attempts to begin to trace the *links* between teacher and student epistemologies, we sought contrasting families of social practices (Minick, 1996). The metaphor of family

resemblance captures the idea that two classrooms with the same epistemological roots will not be identical, but will share clusters of common features. The metaphor comes from Wittgenstein, who referred to "Language game families" (Reichenbach, 1998). We created a working contrast between two common epistemological orientations. Nystrand and his colleagues (1997) contrasted monological and dialogical patterns of classroom discourse and analyzed the epistemological assumptions of each, focusing on "whether teachers treat source texts, students' utterances, and their own statements as either 'thinking devices' or a means for transmitting information" (p. 9). The monological pattern has also been described by Minick as *representational speech*, in which "task motives and goals, participants' social positions and relationships, and ideologies, technologies, and customs of language use give rise to attempts to construct close relationships between what is meant and what is said" (p. 346). Readers will recognize the resemblance here to the IRE (teacher Initiates, student Responds, teacher Evaluates) interaction pattern reported as widely prevalent in classrooms (Cazden, 1988; Mehan, 1979).

The monological/dialogical contrast matches quite well Perry's (1970) distinction between dualistic and relativistic thinking, and aspects of Belenky and her colleagues' (1986) distinction between received and constructed knowing, without some of the subtleties. Our initial working distinction is presented in Table 1. Using Belenky and her colleagues' terms, *received knowers* feel that knowledge is "out there" and that someone in authority will be able to give them the knowledge they need. Knowledge exists as facts, and clear transmission of these facts, uncontaminated by feelings, is the central part of learning. Received knowers are uncomfortable with ambiguity, expecting things to be right or wrong, and they do not see discussion as a useful means of learning. Their own experiences and feelings are not part of real knowledge and are kept separate from their literate learning. This perspective has an implicit hierarchical framework of authority and control.

Table 1: Identifying Features of Epistemological Stances

RECEIVED KNOWING	CONSTRUCTED KNOWING
Believe in a single Truth that is made up of facts discovered by authorities.	Belief in context-bound knowledge constructed by communities of users.
Answers/facts are simply right or wrong.	Believe that the significance and meaning of facts/answers is affected by the circumstances.
Uncomfortable with, and avoids controversial and complex issues.	Welcomes controversial and complex issues.
Teacher's role is to ensure the delivery of content/ facts to the children.	Teacher's role is to help expand children's independent and interdependent thinking.
Relies on single sources of information.	Encourages multiple, and potentially conflicting, sources of information.
Teaching emphasizes facts and memory.	Teaching emphasizes process of knowledge construction.
Learning is individual enterprise.	Learning is social enterprise.
Knower and known are separate.	Knower and known are connected.
Teacher is sole authority with respect to knowledge in the classroom.	Authority for knowledge is distributed in the classroom as experience is deemed relevant.

Implicating a different framework of authority, *constructed knowers* view knowledge as constructed by individuals in interaction through language (or semiotic systems). Thus, discussion is valued as a tool for learning, and knowledge is more properly thought of in the active sense of knowing. Knowledge, in this view, is not separate from life experiences and feelings, and certainly the most interesting knowledge is rarely simply right or wrong. Constructed knowers expect complexity and ambiguity and can find it most engaging. The implicit authority relationship is necessarily more distributed and less hierarchical than the framework underlying received knowledge.

Selection of contrasting classrooms

To find clearly contrasting classrooms we asked a researcher from outside our project to identify contrasting teachers based on our descriptions in Table 1. From field notes, he identified from our initial set of twenty-eight teachers, four who consistently represented these contrasting discourse patterns. Two of these teachers lay on each side of the received knowing/constructed knowing dichotomy. Teachers classified as constructed knowers were different and worked in different circumstances. One is an African American teaching in a suburban school. The other is Caucasian and teaches in an urban setting. One of the received knowers is Caucasian and teaches in an urban setting. The other is Hispanic and teaches in a bilingual urban school. All four are women.

After identifying these contrasting teachers' discourse patterns, we then asked the third member of our team to classify the four transcribed teacher interviews using the categories listed in Table 1. There were no disagreements on the contrasts. We then examined the respective field notes and transcribed tape recordings of classroom interactions for patterns of interaction. In summary, our process for identifying these contrasting teachers' discourse patterns was thus: draw up a table of contrasts based on the literature; have these contrasts applied independently to select contrasting classroom based on discursive practices; have a further, different, researcher categorize the selected teachers on the basis of their interviews. Finally, we transcribed and examined the student interviews from these classrooms, noting epistemology- and identity-relevant statements.

Our initial selection of teachers who were successful in producing academic achievement opened the possibility of examining other differences in what was achieved through the classroom discourse. Our selection of students balanced by gender and relative competence (one boy and one girl at each level) was to ensure a reasonably representative and comparable sample from each classroom. In each classroom these students gave quite consistent responses, and the six students comprised between 20 and 25 percent of their classes. We believe these students are reasonably representative of the students in their respective classes.

FINDINGS: CONTRASTING CLASSROOM PATTERNS

The two pairs of teachers and their classrooms were internally consistent, and the contrast between the pairs was clear at each level. Although we analyzed two pairs of teachers with contrasting epistemologies, along with their associated students, the clearest way to illustrate the contrasts and linkages is to present portraits of just two of the four cases to show in some depth the connections. We present here, then, brief portraits of two teachers we call Pam and Stacey. (All names used in this report are pseudonyms.) Pam is a Caucasian teacher teaching in a relatively small urban school system. She has been teaching for 14 years. Stacey is an African American teacher teaching in a similar-sized suburban environment. She has been teaching for eight years.

In each case, we first examine the teachers' epistemologies, then move on to classroom discourse patterns to show how their epistemology is made manifest in the orchestration of discourse in their classrooms. Finally, for each teacher we examine two student cases, a high and a low performing student, which illustrate the pervasiveness of the epistemological contrast across the range of students. These contrasting characteristics were consistent in the initial analysis of all four teachers and consistent with patterns of instructional interaction in their classrooms. However, the contrast we are representing is based on independently constructed clusters of beliefs about knowledge, knowing, and authority; thus the distinguishing examples will not be exactly parallel in the data used to represent the contrasting cases. For example, we will present more direct dialogue from the received classroom example because the IRE pattern occurs consistently and is clear in smaller text segments; and the monological structure is more simply evident in the classroom talk. In the constructed classroom, the talk is more extended in each event, and it is the combination of the talk and the larger activity of which it is a part that is needed to capture the overall pattern.

Teacher Epistemology

Pam Redford. In keeping with the characteristics of received knowing (e.g. beliefs that there is a preexisting truth and that knowledge is facts transmitted by an authority) a dominant theme in Pam's interview and classroom interactions was a concern that students arrive at the correct answer. Pam comments that

> generally, most of what we do is read aloud. For me to be sure that they have truly read it . . . we do it aloud together, which in some ways isn't fair to the students who have high skills because they could be going further, but they usually extend themselves a bit further, or I might add an extra question.

Her primary concern is that they have read the material and understood it correctly, asserting her authority. Pam's view of talk in the classroom is that she has "so few that actually stay engaged . . . with the conversation, that I don't use it too often. . . . They're very good if I'm leading the discussion . . . they're not good at making choices." Pam's responses are cast in I/they terms.

When it comes to classroom management, Pam sets the rules and the circumstances are irrelevant. "You don't ask somebody 'why did you hit them?' Hitting is against the rules. It doesn't matter why. . . . Eventually you can get into the why's but the consequences aren't going to change." When Pam describes successful students in her class she highlights conventions like raising one's hand and "good at listening, following directions, . . . following through and doing a good job." Low performing students are described as displaying qualities that are opposite of these.

When asked if students have different understandings of books that are read in class, she observes: "Even in the social studies or any content area . . . I'm more concerned with writing it and correcting it and making sure I explain it to them. . . . They tend to be very accepting of problems or explanations . . . they don't question too often." Getting the correct answer, as opposed to, for example, engaging a different perspective, remains the goal.

Classroom interactions orchestrated by Pam. During a typical classroom interaction, Pam makes manifest her more received epistemology through her structuring of classroom discourse. In the example below, we see attention to the issues of correctness by means of the IRE, with little if any student contribution to the overall direction of the interaction. For example, after having students write in their journals a summary of the story they have read (no personal responses), Pam begins:

T: We have been working all year on what is called sequence. What does sequence mean?

S: Order?

T: That's right. . . . Tell me some things that happened in *Mr. Popper's Penguins* and we'll put them in sequence.

S: He paints.

T: OK. That's one event. . . .

T: [to student without hand up] You can't tell me *anything* that happened?

S: The guy was walking on the roof.

T: OK, do we know who? Does it give his name?

Ss: No. He's the tightrope walker.

T: Thank you James. See, you remember something from the story. . . .

S: Captain Cook built a nest.

T: OK. Very good. What is it called when a penguin builds a nest?

Pam says she wants 20 of these events on the board for students to put in order. The pattern of IREs continues until:

T: OK. I need two more.

S: The penguins say "Ork."

T: OK. You know, that's not an event since it happens a lot in the book, so we won't be able to use it to find its order in the story. What happens at the very end?

S: They're all together.

T: No, not all together.

S: Mrs. P. worried about no money.

T: Very good. Mrs., P. worried about having no money.

The entire activity sequence took 37 minutes, all of which was monological, with heavy reliance on the IRE pattern. The students were asked to organize the sentence strips of the events in the story. The teacher organized hers incorrectly on the chart and invited challenges to her ordering, but nobody picked up the challenge, so she said, "OK, in the interests of time I'll put the correct way up here." At no point in the discourse is there any suggestion that Pam is not the sole authority.

At no point do the students get to control the topic of discourse, represent themselves as knowers, or engage in academic discussion in response to each other's comments. They offer information, but only to get the right answer and have it verified by the teacher. Over the course of that day, there are eight records of Pam responding to a student response with "No." There are also five times when she called on students who did not have the answer and simply called on another student. There are no examples in which student-to-student comments occurred in public (sanctioned) interactions. Pam's emphasis on accuracy, singularity, and convention in her classroom practice is consistent with the values expressed in her interview.

Student epistemologies in the received classroom

Classifying the students' epistemologies was a bit more difficult. They were a little more multivocal, and the indicators of their epistemological stances were distributed among data sources. Nonetheless, we found considerable consistency. The sources of data we used for characterizing students as received or constructed knowers included classroom interactions and individual interviews. Some of the indicators we noticed in each classroom were quite subtle. For example, in the received classroom, in response to our inquiry as to whether there were any good authors in their class, some children right away assumed we were talking about other students. Others thought we must be referring to the authors of the commercial books in the classroom. Others, balking at thinking of other students as authors, didn't understand the question. Similarly, when we asked about research, some did not understand the question until it was explained, and then could only conceive of it in terms of looking up words in the dictionary.

Mandy (Low competence). When interviewed, Mandy explained that a good writer "writes fast . . . [for example] when the teacher tells us to write a story then it doesn't even take [a peer who is a good writer] . . . not even ten minutes." She feels that she is a good writer for the same reason. Mandy does not have conversations with other students about their writing because she "wouldn't want to hurt their feelings or nothing because sometimes when someone comes up to them and says 'Oh, you're a bad writer,' and everything. Then, they'll tell the teacher and then sometimes they actually start to cry." Besides, she points out, they are not allowed to give other students ideas "because then that would be giving them things that you thought of in your head. . . . Then they'll have, probably, the same stories." She does not think they do research in their classroom but is unsure what research might be. When it is explained, she says that they do not. She has no idea what her teacher would say about her writing, because "she just, I don't know. She puts everything down on the report card and she sends it home." She expects to get "excellent" on the report card for writing and a comment like 'Mandy has behaved and she is nice to other classmates."

Mandy does not understand the questions about describing oneself as a reader or a writer, nor what she would ask another child to learn about him or her as a reader or writer. She feels that the good readers are "all the kids that are quiet and they just listen . . . they challenge theirself. . . . they get chapter books." To help a classmate become a better reader, Mandy suggests telling him to "stop fooling around because the more you fool around the more you get your name on the board and checks. . . . [and] . . . if he doesn't know that word, if he doesn't know how to sound it out or if he doesn't know what it means, look it up in the dictionary." She claims not to have discussions about reading in class, and at no point in the interview does she make connections across books or between books and personal experience.

Mandy's view of literacy emphasizes individualism, convention and speed or volume rather than meaning making, and conforming behavior. This is in keeping with such constructs as "Redford Readers" in Pam's classroom, where students must sign a contract agreeing to read at least 5 pages a day and "keep track of it." Mandy does not have a sense of authority or a sense of agency with respect to learning, evaluation, or knowledge production. Based on conventions she feels reasonably capable as a writer, but she does not have a sense of identity as a writer or reader beyond that. Being a reader or writer appears not to be an important part of her identity.

Millie (High competence). Millie challenges herself. She chose *Superfudge* (Blume, 1980) "because it was, like, challenging, the words that was in there. . . . Because we don't read that book until fifth grade and I was going to try it." She likes realistic fiction, though she does not have a term for describing it. She feels that "I'm not all perfect in reading. But, I'm good. But, I mess up a lot because when you mess up you learn from your mistakes." When asked if there are different kinds of readers in class, she distinguishes them on a good/not good continuum and in terms of levels: "Well they can read . . . better than me because when they read they don't mess up as much as I do. . . . they are on a higher level than me." She has changed as a reader, she says, "because I'm reading more and more and bigger stories than last year." Her next goal is to "learn books harder than chapter books . . . so I can almost get on a higher level." Millie says that sometimes they have discussions in class and that she likes to add to those discussions. She gives an example of how the class disagreed on whether the author of *Stone Fox* (Gardner, 1980) should have let the dog Searchlight die. However, this is not common and she says she never disagrees with the teacher.

Millie's best piece of writing, in her opinion, took 15 to 20 minutes to write and she selected it as best because "We had to write what does responsibility mean and I won." When asked what she does well as a writer, she says, "People tell me that when I write I write good because . . . I say what I want to say, not what somebody else says. I don't take people's ideas. I just think of my own and just write." Indeed, what she learned most recently about writing is that "if you write and you copy off of somebody that means you're not . . . you're acting like you're not a real writer. 'Cause if you were a real writer you would think of your own ideas to make your own story." Her friend who is a good author "tells examples . . . and she makes her stories long."

They do not have writing conferences with other students in her class, and she does not know what the teacher thinks of her writing. If Millie were going to help someone with their writing: "If they need help, or in spelling . . . in cursive I would give them . . . 'cause I have sheets, spelling sheets that you can trace and stuff. . . . and they can practice." The class has done research, she says, "The research we do, like if we need a word that we don't know what it means, we will look it up in a dictionary. . . ." She says she has never encountered conflicting sources of information.

Although Millie feels competent in her reading (cautiously) and writing, her indicators for competence are tied to accuracy, volume/size, and convention more than to sense-making. She measures her progress (and sets her goals) by levels of technical skill and others' performances and judgments. This is not surprising given how Pam has set up the classroom activities and interactions. This sense of technical and performance competence appears important to her sense of self, but the literate activity itself, being a writer for example, is not. She likes to have discussions but the main thing about other people's ideas in writing is that they are to be avoided because it would be stealing. Conflicts in authority are not imagined. She does not show a strong sense of her own authority or a valuing of multiple sources or voices.

Teacher/student links

From the descriptions above we see how Pam's conscious attention to monologue in her classroom interactions in the name of correctness and transmission of knowledge trickles down to both her high and low achieving students' literate epistemologies in their clear concepts of success (technical and performance) and their perceived roles in knowledge consumption/production. The literacy in which these students are being apprenticed is very different from what we see in Stacey Bane's classroom.

CONSTRUCTED CLASSROOM

Teacher Epistemology

Stacey Bane. Stacey Bane is considered a constructed knower who, in keeping with Belenky and colleagues' (1986) thinking, views knowledge as a much more interactive process than Pam. Whereas in Pam's goals and subsequent classroom interactions, we see her seated in a position of power and authority, in Stacey's classroom we hear authority as being shared among conversation participants – a very different apprenticeship into literacy for her students.

In our interviews with Stacey we learned that her main goal for the end of fourth grade is that her students will be "thinkers." She views reading "as an opportunity to take themselves to another place, as an opportunity to think . . . a commitment to themselves as thinkers." This is the foundation of Stacey's language arts instruction. She likes Mildred Taylor books because they are "about treating people unfairly . . . and the respect that they have for one another and understanding that there are going to be differences of opinion but we respect them." She insists that her students "don't just take what people say to you as the word or the gospel. Question every single thing." She considers central to her instruction "a lot of talking, a lot of conversation, a lot of discussion," and she applies the same logic to her own development. She feels that making her a better teacher would require "opportunities for new ideas. Teacher getting-together, sharing of ideas, what worked for you, how did you do it, being available for questions." Stacey views authority as distributed, both in her classroom and in her own learning.

In describing a successful student Stacey observed that the student "looks at reading with reader's eyes in terms of reflective thinking, and then she sees it with author's eyes in terms of intentions – what did the author intend? Why?" Stacey has her students establish the rubrics by which their writing is evaluated, as she does for their classroom behavior: "Kids are involved in the decision making. These are the parameters, *let's* come up with a plan within these parameters . . . and when *we* reflect, when it's not working, what's working, what's not. What can *we* do to change those things that are not working? . . . I want them to know that I value their opinions." The use of "we," students' contributions to decision-making, and the insistence on student agency all suggest distributed authority. The explicit expectation of multiple values and realities, and the active engagement of conflicts is fundamentally dialogical.

Stacey is committed to her students taking control of the production of knowledge. In approaching the study of Martin Luther King, Jr., for social studies, she presented a lot of different materials to the students and the students generated an extensive list of questions.

> It was just overwhelming to go to the library and have this big list of questions. Where do you begin? So we came back, looked at that experience. When you went to the library, what worked? Well, 'I found the book, it had this information. But that's not what I really wanted to find out.' . . . OK, so now we had to do some fine-tuning. . . . [they had to focus] and then that helped them with the research, and it also helped them because they were helping each other as they came across information. 'That's going to help so-and-so with his question.'. . . pulled it together, and then we were just talking

about . . . the community is very important. . . . a community of respect. So then I said, 'You have all this information, you now know about this man. . . . What effect did this man's life have on yours?'

Stacey helps the students see the significance of their own experience for making sense of what they read. She also helps them see the relevance of the history they read for their own lives.

Classroom interactions orchestrated by Stacey

In one typical classroom interaction, Stacey used an easel chart to introduce a Native American lesson to the fourth graders as the third graders in her class work independently. She announces, "OK, there were, friends, five tribes. One tribe was called the Mohawk – and the Mohawk River was named after that [she writes this on the chart as she speaks] – the Seneca, . . ." Students begin to volunteer the remaining tribes and Stacey writes them on the chart paper. The students talk to each other about the tribes and relevant things they have learned. One student tells a story about a Native American weaving exhibition. Stacey invites their responses on a number of open-ended issues and they offer numerous possibilities, which she simply repeats and writes down. She has available a range of books, and comments that they will be "your first reference tool, your first resource. OK?" She goes on to explain:

And what I'd like for you to do is, once you've decided what tribe you're interested in researching, then . . . I'll give you like 10 minutes to just skim through the book. I don't want you to read, just skim through your book. Look to see if the book gives you any ideas on things that you might want to find out, topics that you wish to investigate further. Are you with me? [Students are already skimming.] . . . So you might want to look at the table of contents to see how things are arranged. You also might want to look at – what are you noticing here? Each chapter has what?

The students respond, "A title; pictures . . ."

A title – there are pictures, photographs – not only that, look in the back, you will find a glossary, you will find an index. Your task for the next ten minutes is to look through this book. You, each of you, have to come up with at least ten questions you want answered about your tribe. . . . OK. Now I need some suggestions on what you think is the smoothest way to go about doing this. Give me a suggestion.

Stacey takes suggestions and they vote on how they will manage the process. Then they get into their books independently, and in pairs they discuss the questions they came up with.

When they come back together Stacey lists their questions on the chart paper. With 15 questions on the easel, she asks "Where are these questions coming from?" Three students comment about their thinking and the role of the books. In response to a question from Keith, Stacey comments, "See, those are questions that – I like the 'why' questions. Because you can't just give a concrete answer – you have to give an explanation. How did you come up with that question?"

Students are already spontaneously looking through their books trying to answer some of their questions with each other. Stacey points out that "You need to listen to each other so you can help each other to refine your questions." Later she works with the students to classify their list of questions into categories. In the process she admits "I'm a little confused," and asks "Can you help me here?" She also discusses the significance of "Native American" and "Indian," contextualizing the knowledge being generated and the significance of language in the process – a theme she continues in discussing *The War with Grandpa* (Smith, 1984) with the third-graders.

Several aspects of these interactions are consistent with constructed knowing and Stacey's interview. First, multiple sources of authority are validated, including self and other students. She encourages students to contribute their experiences; "Talk to me, friends." Second, generating interesting questions is valued more than getting answers to someone else's questions. Third, students publicly respond to each other, looking at each other, suggesting that they take each other seriously. Fourth, they are encouraged to help each other refine their questions, working collaboratively. Fifth, Stacey focuses the students' attention on the process of doing research on their own questions by helping them to reflect on their successful actions, validating their procedural knowledge and fostering a sense of agency in knowledge-making. They are asked to take their own and each others' knowledge seriously. In Stacey's classroom we can identify an integration of procedural knowing and subjective knowing that is a hallmark of constructed knowing. Her "Talk to me, friends" raises the significance of the students' experience and, on the other side of that, her "I'm confused" lowers her knowledge/experience to equalize the authority status among the conversational participants.

Henry (Low competence). Describing himself as a writer, Henry says he's "Typical. I don't, like, . . . finish a final copy and start writing another story right away. . . . It takes me a little longer. I write a lot of stuff that's happened to me. Like, I have entries about like when I was at the beach with my friends, or I can borrow [ideas]." He conferences with his friends about writing, and sometimes "they give me, like, ideas to put in there . . . [or] they think it's good, it's got enough details and stuff that I could meet with the teacher." The most recent thing he has learned as a writer is to be more organized. Next he would like to learn how to write longer stories because "I have lots of information . . . I know I've got more."

If Henry were to ask a pen pal to describe himself as a reader, he would ask: "What kind of books do you like? Who's your favorite author? What book are you reading now? . . . Have you read any good books lately?" When asked whether there are different readers in his class he observes, "Like Steve, he reads longer books than other people. And Dan. When he gets into a book, you're not going to stop him, like if you say, 'Hey, Dan, listen to this sentence.' He's . . . not going to come out of that book. Jenny, she reads hard books like Steve. But, umm she finishes books, like, really fast. . . . Priscilla. She really likes to read mysteries. She reads long stories, like Nancy Drew." He points out that, like him, Roger likes the *Bailey School Kids* (Daden & Jones, n.d.) books.

Henry has suggestions for helping kids who are not very good at reading. "If they are reading harder books that are too hard for them, not to push themselves as much. . . . maybe later in a couple of months read those books. Push them to the side and read, like books that are at your level." Henry enjoys adding to class discussions of books. "Like Mrs. Bane says when we are in the literature group, I always have something to relate to the book." He also finds the other students' experiences and interpretations of the book interesting, except, he notes, "If they talk about some of the really little details that you don't really need." He feels comfortable disagreeing with other students and quotes what he said to a classmate on a particular occasion. Henry enjoys reading, and often makes connections between books. He also feels that some of the students in the class are good authors, because, for example, when "Emilia read hers . . . it was really long, but I'm like, 'What's going to happen next? . . . Once you get into it you want to

know what's going to happen next. Their mysteries are really a mystery." He compares their writing with other children's books and concludes that books are sometimes inferior. For example, "Like it says the *'Boxcar Children Mysteries'* on the front of the book and it says the 'mystery of the missing *something*'. . . and then, like, I can't get the mystery out of it. . . . It just doesn't give it to you." He has encountered conflicts among books before when doing research and reasons that one of the authors probably hadn't done his homework. His strategy for dealing with such situations is to consult more sources.

Henry's comments suggest that his reading and writing, particularly the latter, are meaning-making activities that are central to his sense of who he is. This is indicated not only in his comments but in the time he is prepared to devote to the activity. He has a strong sense of his own authority and uniqueness. He also concedes considerable authority to his classmates. However, no authority is beyond critique. He expects conflicts among authorities and has a sense of agency in confronting such conflicts. The teacher is not centralized in Henry's view of knowledge production.

Steven (High competence). Steven is calmly confident about the significance of his own experience and the experiences of others, and he uses these consistently in his writing. He applies his particularly well-developed social imagination not only in figuring out his audience, but in developing his characters. For example, in one of his pieces he writes, "She began to wonder if she had even had a son named Kevin since her neighbors could not remember him."

He takes his writing very seriously and he has a clear sense of agency in the process, and of its significance for his identity. He took about three weeks to write one of his pieces and had "some really hard struggles" with it (said with relish). He says that he expresses his feelings well as a writer and "really get(s) out what [he] want(s) to say," though sometimes he gets "into a staring match with a blank page." He frequently looks at things through an author's lens, considering the genre he will use, how he will capture the audience, and the many ways he comes up with ideas, including his own experiences and children's books. For example, "But then I said to myself, well, where's a place that gets the reader in good suspense so they want to read on, but it's a good stopping place?" Or, on another occasion, "So I was looking at it and I'm like, well how can I say that this statue, I mean that this trophy, is really important to me. And how can I

make it . . . make that word 'trophy' be more symbolized in the statue. And I based it on the trophy, but it was really about a statue."

When doing research, Steven is persistent in his pursuit of information. When he was researching racial segregation in airports, he tried two different libraries, the internet, and he called the airport. He says that he has not encountered discrepant information sources yet, but if he did, he would "take those two opinions and put them together and then I would have a variety of what one author thought and what the other author thought. So I would just put them together . . . and see what I came up with . . . or perhaps try to even it out."

In distinguishing the good authors in the class, he distinguishes them by their strengths. For example, "For the funny part, Jessie is really funny. He writes a lot about fantasy stuff." Then there's Ron who's "a pretty good writer . . . and he's a little better at drawing than writing. . . . [and] Emilia [in her mystery] gave details. She described the characters. It was a really good mystery because it had a point and it had something that the reader had to figure out." He has a great deal of knowledge about the structure of different genres – realistic fiction, fantasy, mystery, and biography, among others. For example, he comments about one of his own pieces "Unlike most mysteries it has a sad ending. . . ." He routinely makes connections among the books he reads and has specific criteria for what he appreciates about particular books.

Steve has a strong sense of his own authority. It is quite clear that he values his own and others' experience as significant sources of knowledge, and that he views knowledge as constructed, and represented through language. He is comfortable with ambiguity and persistent in seeking his own answers. He is thoroughly connected both to his peers and to his own experience. At no point does he refer to his peers' relative technical competence.

Teacher/student links. Stacey's stated primary goal – that students be "thinkers," meaning that they actively participate in and command authority of their knowledge construction – is made very clear both through the ways in which she facilitates classroom talk (dialogic) and in what she asks students to do. We see a student-to-student relationship/discourse in this classroom that is more collaborative than individualistic. These students expect to participate in shared knowledge production and value their own and others' experience in the process. The teacher actively undermines the singularity of her own authority or that of the text, and we hear that in the students' voices.

ELABORATING THE CONTRASTS

The differences represented between these two teachers highlight the contrasting epistemological dimensions of competent and complex individuals. Pam values a single truth and intends to organize her instruction around delivery of facts and correction of any errors. This role centralizes authority in her position. She does not use "we" referring to class activities, and expresses the opinion that students are not very capable of discussion or dialogue – events that are common in Stacey's classroom. Pam is also not keen to have controversial topics in her classroom, and she views differences in students' understanding as not so much related to their personal experiences but as simply errors. In contrast to Pam, Stacey views knowledge as highly related to individual experience and her role as helping students become better thinkers, and to view themselves as such. Authority is thus distributed. She constantly uses "we" in describing classroom activity and actively arranges for constant dialogue. Differences in understanding and experience are valued sources of learning. In her classroom, Stacey embraces the complexities of inviting greater student participation, multiple perspectives, revision of tasks based on student input, and interdependent thinking.

These contrasts between Pam and Stacey's beliefs about teaching and learning are made manifest in their interactional patterns – monologic versus dialogic. Pam's classroom interactions are primarily monologic and centered around answers that are simply right or wrong, limiting the more complex issues that might arise in student learning, and preventing interactions among students. In the received classrooms, the IRE pattern – teacher Initiating, child Responding, and teacher Evaluating – with its attached positioning of teacher and students with respect to knowledge and authority is centralized. Examples of genuine dialogue were virtually absent from the records of Pam's and other received classrooms and there were virtually no examples of student-to-student interaction in public talk.

By itself, this monologic pattern in received classrooms is not surprising, since it has been documented as the institutional standard, occurring in most classrooms across the country most of the time (Cazden, 1988; Dillon, 1988; Nystrand et al., 1997). But it is not the central pattern in the classrooms of the constructed teachers. In these classrooms, dialogue is common. IRE patterns did occur in these classrooms; however they were used primarily to get people onto the

same page so that a productive dialogue could occur. They were thus normally followed by dialogic interactions.

Again, we point toward and seek to better understand the substantial differences between the literacies into which the students in these classrooms are being apprenticed. This becomes most clear when we hear the understandings the students have developed about literate epistemologies, and their literate identities in the context of their learning environments.

The students held different views of what it means to be competent, the significance of technical competence, the significance of literate activity, the sense of agency in learning and knowledge production, and the significance they place on their own and others' experience. In the received classroom we hear both the students and the teacher referring to behavior and text level, or relative technical competence, as the marks of achievement that are drawn into their sense of identity. Actually engaging in literate activity, on the other hand – being a reader or writer – did not seem to be part of their sense who they are, and they did not reveal a sense of agency in their learning or with respect to knowledge production. The reverse was the case for the students in the constructed classroom, who barely mentioned technical competence, though they were aware of and took into account these differences, along with individual interests, when recommending books to other classmates.

In the constructed classrooms, students viewed literacy as a meaning-making activity for which their own experiences and those of their peers were particularly important. In keeping with Stacey's goals that her students become "thinkers," "[not] just take what people say . . . as the word or the gospel," and "[be] involved in the decision making" her students had a sense of distributed authority. Henry's suggestion for struggling readers that "If they are reading harder books that are too hard for them, not to push themselves as much . . . maybe later in a couple of months read those books. Push them to the side and read, like books that are at your level" carries with it a sense of agency or authority and also an understanding that pace and ability are not static – different students are in different places with their learning at different times. Likewise, in his interview Steven identifies different students as having different strengths and goes on to relay his own sense of agency through his evaluation of his own writing. He says that he really expresses his feelings well as a writer and "really gets out what [he] wants to say." By contrast, in Pam's classrooms where her goals include controlling class discussions and ensuring

that students have "truly read [the work]," her students viewed literacy as a technical matter for which neither their own nor their peers' experience was particularly relevant. Authority lay elsewhere, as is reinforced by Pam's attention to behavioral conventions such as raising one's hand, "following directions," and the general "doing a good job." Indeed, in the received classroom, knowledge was viewed as an object that could be "stolen."

Students in the constructed and received classrooms also had a different sense of *relationship*. Those in the constructed classrooms had a knowledge and interest in others' experiences, products and literate predilections. Henry's accessible resource of "borrow[ing] ideas" from peers and conferencing with his friends about writing as well as Steven's confidence in dealing with various author discrepancies suggests that their literate identities included a sense of belonging to a particular literate community. Mandy's fear of sharing ideas because "that would be giving them things that you thought of in your head. . . . Then they'll have, probably, the same stories," coupled with Milllie's judging her writing achievement via victory ("We had to write what does responsibility mean and I won"), suggest that the sense of belonging to a particular literate community was not evident in the received classrooms. Here individualism was a prevalent aspect of literate identity.

These contrasts illustrate that, in particular classrooms, students' literate epistemologies can be traced from teacher to student through the discursive practices of the classroom. In other words, the students' discourse in interviews reflects the nature of the literate apprenticeship they have experienced.

Discussion

The primary intention of our study was to seek links between teachers' literate epistemological stances and those of their students through the discourse of the classroom. The students we have used as examples to represent the classrooms provide a good representation of the students in those classrooms (certainly the ones on whom we have detailed data), but we remind readers they are only suggestive of themes in the remaining 24 classrooms. We also remind readers that the classrooms we studied were selected as the clearest contrasting examples

from among the 28 classrooms. They are not representative of the other 24 classrooms except that traces of the social histories of these two archetypes were evident in the other classrooms. Most teachers were multivocal and their classrooms reflected their mixture of stances. Some, for example, could be classified as constructed knowers in language arts, but not in math or science. Even in classrooms organized generally around constructed knowing, it was possible for students to continue to view themselves and classroom life through the lens of the received knower. Similarly, in largely received classrooms it was possible to find the odd (primarily) constructed knower among the more capable students. Presumably, these students were either sustaining a stance developed outside the classroom, or their teachers' epistemologies differed across domains or contexts. In the larger sample, in which literate epistemologies were more mixed, the less competent readers and writers were more likely to show evidence of a received knowing stance (Wharton-McDonald, Boothroyd & Johnston, 1999).

We also must point out that our reduction of epistemology to a dichotomy for the purposes of this study oversimplifies a complex construct and glosses over some of the disagreements on epistemology. As Hoffer and Pintrich (1997) observe, the definition of the construct and its domain specificity are currently points of disagreement among researchers.

That said, our selection of the set of teachers we studied enabled us to examine in some detail what might be to the social genetics of literate epistemology and identity. At least in these selected cases, there were relationships between teachers' epistemologies and those of their students. The classroom discourse, orchestrated by the teacher, was the likely mediating variable. Our data thus fit with the work of sociolinguists (Cazden, 1988; Fairclough, 1992; Gee, 1996) who argue that discourse environments like the IRE are problematic because within them, children are acquiring not simply facts and strategies, but routines of behavior and patterns of values, beliefs, roles, identities, and ways of knowing. In other words, discourse environments have powerful effects on children's epistemologies, over time changing the course of their development. The data also fit the work of Reichenbach (1988), who uses epistemology "to focus on the rules and standards of reason that organize perceptions, ways of responding to the world, and the conceptions of 'self'" (p. 84). These works raise a concern for the normalizing processes through which "histories in curriculum universalize and naturalize subjects and subjectivities, thus establishing new systems of exclusion that operate at the level of the body and the mind"

(p.84). Lave (1996) makes similar arguments, pointing out that it is the whole person that participates in learning, and thus learning is inseparable from identity formation.

Our data also fit with the work of Wells (1994), who argues that literacy is a cultural tool that shapes, and is shaped by, the social practices in which it is used and the motives and goals it serves. These social practices and goals are embedded in theories of knowing and the functions of language, both spoken and written. With literacy, then, children acquire epistemologies and identities, and we should take this seriously in our arguments about how to structure literacy instruction, although the particular literate epistemology we should attempt to cultivate rather depends on one's perspective and intentions. Furthermore, it is arguable whether it is better to have a particular epistemology or whether it is better to have a mixture of epistemologies such that children are offered multiple possibilities. Such matters demand further research.

Previous research on epistemology has been conducted on high school students and adults. As documented here, there are epistemological differences among elementary school students that can be detected through interview and observation. Furthermore, although these differences are not part of literate achievement as it is currently measured on standardized tests, the manifestations of these epistemologies in children's conceptions of literacy, their literate practices, and expressions of their literate identities, that the implications for literate development are not trivial. We emphasize that the differences observed in this study were found among classrooms in which the teachers had been selected because of their teaching competence. Competent teachers can have very different epistemologies – and hence very different literacies – in their classrooms. The normative measures that are the standard indicators of student achievement provide a restricted view of what is achieved through literacy instruction (Johnston, 1999). It is possible, for example, for students to develop a sense of competence in reading or writing without developing a sense of agency or authority. Without a sense of agency and authority, and a history of expected engagement in public discourse, we might wonder about the significance of schooled literacy for subsequent participation in democratic self-government.

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